

REMARKS

The Examiner is thanked for his careful review of the present application. The matters addressed in the Office Action are addressed below.

The Restriction Requirement

It is noted that during the telephone conversation with the Examiner no traverse was made to the provisional election to prosecute the invention of group 1, claims 1-10. Applicants hereby affirm the foregoing election. In accordance with the foregoing election, claims 11-33 have been canceled.

The Present Invention

By way of background, the present invention, as set forth in independent claim 1, relates to saccharide-derivatized oligosaccharides. The inventors have discovered a saccharide-derivatized oligosaccharide that comprises the extrusion reaction product of (1) a saccharide product having an average degree of polymerization ranging from 1-4, with (2) a mixture of malto-oligosaccharides. For example, a maltodextrin may be derivatized with a lower-order saccharide, such as maltose or maltotriose.

The Claim Amendments

Claim 2 has been amended to depend from claim 1. Claim 1 has been amended in non-narrowing fashion for clarification. No new matter has been added by way of any of the foregoing amendments (see, e.g., page 10, line 28 et seq.).

Discussion of Section 112 Rejection and Objection

The Section 112 objection is now moot.

Applicants respectfully traverse the Section 112, second paragraph rejection. First, with respect to the term "derivatized" in claim 1, the Office Action states that

In the absence of the specific derivatization to the claimed compound core or distinct language to describe the structural derivatization or the chemical names of derivatized or substituted

compound claims, the identity of said derivatized compounds would be difficult to describe and the metes and bounds of said modified compounds applicants regard as the invention cannot be sufficiently determined because they have not been particularly pointed out or distinctly articulated in the claims.

Applicants respectfully disagree. As specified in claim 1, the oligosaccharide mixture is a saccharide-derivatized oligosaccharide mixture. In other words, the oligosaccharide mixture is derivatized with a saccharide. Claim 1 therefore does indeed describe "specific derivatization" - so long as the malto-oligosaccharide mixture is derivatized with a saccharide within the purview of claim 1, the product is deemed to fall within claim 1. There is nothing whatsoever that is indefinite about the term "derivatize" in this claim.

With respect to the phrase "extrusion reaction product of a saccharide product" the Office Action has truncated the claim. Claim 1 in fact specifies the extrusion reaction product of a saccharide product having an average degree of polymerization ranging from 1 to 4 with a mixture of malto-oligosaccharides." The Office Action is not entirely clear as to why this is indefinite, stating only that "the specification does not provide a standard for ascertaining the requisite degree." If the Office Action is suggesting that the degree of derivatization is not specified in the specification, applicants respectfully disagree. Beginning at about page 9, line 29, for instance, the specification provides guidance as to the extent of the dextrinization reaction. The specification states clearly that the dextrinization should be sufficient to convert at least a portion of the highly digestible 1-4 bonds present in the starting material to other bonds. The specification provides for use of an extruder, and provides the model number of an extruder that is presently commercially available. The specification further provides barrel temperature ranges with preferred ranges, revolution ranges with preferred ranges, vacuum conditions, and the like. The specification further provides that the amount of lower saccharide preferably should be selected relative to the amount of oligosaccharides starting materials such that the product that is extruded from the extruder barrel appears as a straw-colored, low-density solid that crumbles and dissolves easily. The specification then provides numerous examples wherein starting materials were extruded to provide a product mixture.

Of course, the present invention is not limited to the specific language employed in the specification and examples, but it is clear that the specification is replete with enabling disclosure sufficient to support all of the claims of the present application. No person of

ordinary skill in this art would have any difficulty whatsoever understanding the scope of the invention defined by the present claims.

Finally, with respect to the term "one other saccharide" in claim 10, the meaning of this claim is abundantly clear from a reading of claim 1 and claim 10. Additionally, mixtures of saccharides with one other saccharide (for instance a mixture of dextrose with a hydrogenated starch hydrolyzate, maltose, maltotriose, or maltotetraose are disclosed on page 8 of the specification).

In some, there is nothing indefinite about the claims of the present application. Withdrawal of the Section 112 rejection is respectfully solicited.

Discussion of Obviousness-Type Double Patenting Rejection

The obviousness-type double patenting rejection is not well founded. The Degelmann '894 patent, to the extent it is understood, purports to disclose hydrogenated sugars. The Antrim et al. '418 patent (which is commonly owned by the assignee of the present application) in claim 1 broadly specifies catalytic hydrogenation of a mixture of malto-oligosaccharide species and derivatization of the hydrogenated malto-oligosaccharide mixture. Looking only at the claims of the Antrim et al. patent, there is no teaching or suggestion to modify the subject matter disclosed therein by substituting the hydrogenated sugars of Degelmann as a derivatization substituent. Indeed, hydrogenated sugars (such as sorbitol) have long been known. The Degelmann reference is no more relevant to the double patenting analysis than any other reference that might disclose a hydrogenated sugar. Nothing in Degelmann suggests that the hydrogenated sugars disclosed therein should be used in connection with a derivatization process, much less a derivatization process in connection with the present invention. In fact, Degelmann appears to be silent as to any use for the hydrogenated sugars that are purportedly disclosed therein. The Office Action refers to the teachings of the specification of the '418 patent to support the double patenting rejection. This is improper, see M.P.E.P. 804. Moreover, even if it were proper to rely on the specification, the fact that the '418 patent had disclosed commercial uses such as encapsulants has no bearing on the obviousness-type double patenting analysis. Simply put, the double patenting rejection is improper and should be withdrawn.

Discussion of Section 103 Rejection

For purposes of the following discussion applicants will treat the '418 patent as if it were prior art without conceding same.

The Section 103 rejection is traversed. The Examiner is correct that the '418 patent teaches, inter alia, a mixture of derivatized malto-oligosaccharides, and that the '894 patent teaches hydrogenated sugars such as sorbitol. However, there is no teaching or suggestion in the prior art to substitute the hydrogenated sugars of the '894 patent for the specific derivatizing ingredients disclosed by the '418 patent specification. As indicated above, hydrogenated sugars have long been known, and to this extent Degelmann is seen to be no more relevant than in any other reference that might disclose hydrogenated sugars. Merely because Degelmann discloses hydrogenated sugars, however, does not mean that it is obvious to substitute such sugars in a derivatization reaction as taught in the '418 patent to arrive at the present invention.

The Office Action states that the modification of the '418 patent is obvious because '418 here disclosed that such compositions had many commercial uses such as encapsulants, acidulates, flocculants - - in view of the recognition in the art, as evidenced by the patent '894, that discloses hydrogenated reaction products of sugar and sugar mixtures.

The foregoing statement is a nonsequitor. It is certainly true that the '418 patent discloses that the specific derivatized malto-oligosaccharides disclosed therein have many commercial uses. It is likewise true that the Degelmann reference discloses sorbitol. Degelmann, however, says nothing at all about derivatization. Where is the teaching to derivatize a malto-oligosaccharide with sorbitol? Where is the teaching to substitute sorbitol for the etherified hydrogenated malto-oligosaccharide mixture disclosed in '418, or for any other form of derivatization there disclosed? This teaching is not provided in the prior art. Only in hindsight can the invention be constructed from the combined teachings of the Antrim '418 and Degelmann '894 patents, and even with the benefit of hindsight it is difficult to see how the combined teachings of the references can lead to the present invention.

CONCLUSION

For the foregoing reasons, all of the rejections set forth in the Office Action should be withdrawn, and the Examiner is respectfully requested to promptly issue a Notice of Allowance.

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Respectfully submitted,

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